EVOLUTION

INTERNATIONAL JOURNAL OF ORGANIC EVOLUTION

Volume XIII, 1959

I. MICHAEL LERNER,
Editor

Published Quarterly

At Prince and Lemon Streets, Lancaster, Pa.

By the

Society for the Study of Evolution

INDEX TO VOLUME XIII, 1959

Adaptive shift and dispersal of a tropical ant fauna, 122
Ae, Shigeru Albert, A study of hybrids in *Colias* (Lepidoptera, Pieridae), 64
Allopatric species of pocket gophers, 247
Ammonites, upper Jurassic, 229
Amphidiploids in *Nicotiana,* 476
Anatomy of *Callimico goeldii* (Thomas), The, (notice of book), 574
Anfinsen, Christian B., The Molecular Basis of Evolution, (notice of book), 574
Announcements:
  Karl P. Schmidt Fund, 150;
  National Science Foundation, 150
Antennae of Drosophila, removal of, 147
Ants, tropical, adaptive shift and dispersal in, 122
Anura, mating calls, 452; hypnotic reflex in, 532
Area, climate and evolution, 488
Aristolochia perianth, 415
Arthropoda, evolution of, 147
Asterinae, chromosomal evolution in, 188
Axelrod, Daniel I., Evolution of the psilophyte paleoflora, 264; Late Cenozoic evolution of the Sierran Bigtree forest, 9
Balanced breeding system in vernal pool mouse-tails, 151
Barley, *H. agriocrithon* as ancestor of, 279
Barriers, geographical and ecological, in evolution, 333; correction, 574
Barriers to gene exchange in Mimulus guttatus, 300
Basitemporal articulation, avian, 194
Behavior and Evolution, (notice of book), 574
Bigtree forest evolution, 9
Bock, Walter J., Preadaptation and multiple evolutionary pathways, 194
Books, notices and reviews:
  Anfiinsen, Christian B., The Molecular Basis of Evolution, 574
  Buzzati-Traverso, A. A. (editor), Perspectives in Marine Biology, 149
  Cold Spring Harbor Symposium on Quantitative Biology, vol. XXIII, 282, 570
  Glass, Bentley, Owsei Temkin, William L. Straus, Jr. (editors), Forerunners of Darwin: 1745–1859, 423, 573
  Hill, W. C. Osman, The Anatomy of *Callimico goeldii* (Thomas), 574
  Millhauser, Milton, Just before Darwin, 573
  Padoa, Emanuele, Storia della Vita sulla Terra, 282
  Roe, Anne and George Gaylord Simpson (editors), Behavior and Evolution, 574
  Romer, A. S., The Vertebrate Story, 282
  Saunders, J. T. and S. M. Manton, A Manual of Practical Vertebrate Morphology, 574
  Takhtajian, A. L., Origins of Angiospermous Plants, 281
  Zirkle, Conway, Evolution, Marxian Biology and the Social Scene, 282
Breeding system in mouse-tails, 151
Briggs, Michael H., Dating the origin of life on earth, 416
Brower, Lincoln P., Speciation in butterflies of the *Papilio glaucus* group, 40, 212
Bufo arenarum, polymorphism in, 532
Buttercups, variation in, 469
Butterflies, (*Papilio glaucus*), 40, 212; (*Colias*), 64
Buzzati-Traverso, A. A. (ed.), Perspectives in Marine Biology, Review by R. G. Johnson, 149
Calvin, Melvin, Round trip from space, 362
Canalization of scute phenotype in Drosophila, 425
Canis lupus, geographical variation in, 283
Cannabis sativa, variability in, 145
Captorhinus tympanum, 99
Caspari, Ernst (with G. S. Watson), On the evolutionary importance of cytoplasmic sterility in mosquitoes, 568
Cei, J. M., Ecological and physiological observations on polymorphic populations of the toad, *Bufo arenarum* Hensel, from the Argentine, 532
Cenozoic evolution of bigtrees, 9
Chemical evolution, 362
Choristoneura hemolymph polymorphism, 537
Chromosomal aberration in *Podophyllum peltatum,* 276
Chromosomal distribution of mutator- and radiation-induced mutations in *D. melanogaster,* 526
Chromosomal evolution in Asterinae, 188
Chromosomal polymorphism in *Drosophila willistoni,* 147
Climate, area and evolution, 488
Cockerham, Clark C. (with R. C. Lewontin), The goodness-of-fit test for detecting natural selection in random mating populations, 561
Cold Spring Harbor Symposium on Quantitative Biology, vol. XXIII, (notice of book), 282; book review, 570
Colias hybrids, 64
Corrections:
  To article by W. Gajewski (Evolution, 13: 378–388), 574
  To article by Masatako Karabayashi (Evolution, 12: 286–310), 282
  To article by D. B. O. Savile (Evolution, 13: 333–343), 574
Crinia, mating calls in, 452
Cytoplasmic sterility in mosquitoes, 568
Dactylis glomerata triploids, 311

da Cunha, A. B. (with Th. Dobzhansky, O. Pavlovsky, and B. Spassky), Genetics of natural populations. XXVIII, 389
Daly, Kevin (with Harold H. Smith), Discrete populations derived by interspecific hybridization and selection in *Nicotiana,* 476
Darlington, Philip J., Jr., Area, climate and evolution, 488
Dating origin of life, 416
Delphinium gypsophilum, a species of hybrid origin, 511
Dispersal of a tropical ant fauna, 122
Dobzhansky, Th. (with A. Brito da Cunha, O. Pavlovsky and B. Spassky), Genetics of natural populations. XXVIII, 389
Drosophila antennae, 147
Drosophila melanogaster, eye pigments, 1; mutator- and radiation-induced mutations, 526; scute phenotype, 425
Drosophila simulans, eye pigments, 1
Drosophila subobscura, inversion systems, 89
Drosophila willistoni, chromosomal polymorphism in, 147
Ear, middle, evolution of, 99
Ecological barriers in evolution, 333; correction, 574
Ecological relationships of butterfly species, 212
Ecotypic variation in *Nigella,* 469
Ehrman, Lee, The antennae of Drosophila females, 147
Eocene rodents, 354
Epling, Carl (with Harlan Lewis), *Delphinium gypsophilum,* a diploid species of hybrid origin, 511
Errata:
In article by W. Gajewski (Evolution, 13: 378–388), 574
In article by Masatako Kurabayashi (Evolution, 12: 286–310), 282
In article by D. B. O. Savile (Evolution, 13: 333—343), 574
Evans, Howard P., Some comments on the evolution of Arthropoda, 147
Evolution, Marxian Biology and the Social Scene, (notice of book), 282
Evolutionary pathways, multiple, 194
Evolutionary signicance of penetration of barriers, 333; correction, 574
Exchange of Genetic Material, (book review), 570
Eye pigments in Drosophila species, 1
Fish evolution in Lake Nyasa, 440
Fish hybrids, 236
Fitness in random mating populations, 561
Forerunners of Darwin, (notice of book), 423; book review, 573
Fryer, Geoffrey, Some aspects of evolution in Lake Nyasa, 440
Gajewski, W., Evolution in the genus, *Geum,* 378; correction, 574
Gambusia hybrids, 236
Gene exchange, in *Dactylis glomerata,* 311; in the origin of *Delphinium gypsophilum,* 511; prevented in *Mimulus guttatus,* 300
Geographical barriers in evolution, 333; correction, 574
Geographical differentiation of inversion systems in *Drosophila subobscura,* 89
Geographical variation in the wolf, 283
Geum, evolution in, 378; correction, 574
Glass, Bentley, Owsei Temkin, William L. Straus, Jr. (editors), Forerunners of Darwin: 1745–1859, (notice of book), 423; review by Conway Zirkle, 573
Goldschmidt, Elisabeth (with E. Stumm-Zollinger), Geographical differentiation of inversion systems in *Drosophila subobscura,* 89
Gophers, pocket, 247
Grant, Verne, Origins of Angiospermous Plants, reviewed by, 281
Grasses, parallel development of morphology in, 418
Gymnosperms, polyploidy in, 24
Hemolymph polymorphism in a moth and the nature of sex-controlled inheritance, 537
Hemp, variability in, 145
Heslop-Harrison, J., Variability and environment, 145
Hill, W. C. Osman, (notice of book), 574
Hordeum agriocrithon, 279
Hotton III, Nicholas, The pelycosaur tympanum and early evolution of the middle ear, 99
Hubbs, Clark, Population analysis of a hybrid swarm between *Gambusia affinis* and *G. heterochir,* 236
Huziwara, Yukio, Chromosomal evolution in the subtribe Asterinae, 188
Hybrid origin of *Delphinium gypsophilum,* 511
Hybridization, in *Colias,* 64; *Drosophila,* 147; *Gambusia,* 236; *Nicotiana,* 476; *Papilio glaucus* group, 40; *Viola,* 318
Hypnotic reflex in the toad, 532
Inger, F., Reply to Sokal, 423
Interspecific hybrids, *Colias,* 64; *Drosophila,* 147; *Gambusia,* 236; *Nicotiana,* 476; *Papilio,* 40; *Viola,* 318
Interspecific mating in Drosophila, 147
Interspecific sexual behavior in butterflies, 212
Inversion systems in *Drosophila subobscura,* 89; in *Drosophila willistoni,* 389
Ives, P. T., Chromosomal distribution of mutator- and radiation-induced mutations in *D. melanogaster,* 526
Johnson, Ralph G., Perspectives in Marine Biology, reviewed by, 149
Jolicoeur, Pierre, Multivariate geographical variation in the wolf, *Canis lupus* L., 283
Jurassic ammonites, 229
Just before Darwin, (notice of book), 573
Kennerly, Thomas E., Jr., Contact between the ranges of two allopatric species of pocket gophers, 247

Khoshoo, T. N., Polyploidy in Gymnosperms, 24
Kurabayashi, Masatako, Corrections to article by (Evolution, 12: 286–310), 282
Lacustrine fauna, 440
Lepidoptera hybrids, 40, 64
Lepturus morphology, 418
Lethols in *D. melanogaster,* 526
Lewis, Harlan (with Carl Epling), *Delphinium gypsophilum,* a diploid species of hybrid origin, 511
Lewontin, R. C. (with C. Clark Cockerham), The goodness-of-fit test for detecting natural selection in random mating populations, 561
Li, C. C., Notes on relative fitness of genotypes that forms a geometric progression, 564
Life, origin of, 362, 416
Littlejohn, Murray J., Call differentiation in a complex of seven species of *Crinia* (Anura, Leptodactylidae), 452
Lorch, Jacob W., The perianth of Aristolochia —a new interpretation, 415
Mammalian characters, evolution of, 344
Mammals, origin of, 405
Manton, S. M. (with J. T. Saunders), notice of book, 574
Manual of Practical Vertebrate Morphology, A, (notice of book), 574
Mating between Drosophila species, 147
Mating calls in *Crinia,* 452
Melanesia, ponerine ants in, 122
Mezosoic mammals, 405
Millhauser, Milton, Just before Darwin, (notice of book), 573
Mimulus guttatus, gene exchange in, 300
Molecular Basis of Evolution, The, (notice of book), 574
Monerma morphology, 418
Moore, D. M., Population studies on *Viola lactea* Sm. and its wild hybrids, 318
Mosquitoes, cytoplasmic sterility in, 568
Moth (*Choristoneura*), 537
Mouse-tails, vernal pool, 151
Multiple evolutionary pathways, 194
Multivariate geographical variation in the wolf, 283
Mutations in *D. melanogaster,* 526
Mutator gene in *D. melanogaster,* 526
Nasal anatomy of reptiles, 175
National Science Foundation, announcement, 150
Natural selection, biometric tests for, 561
Newman, Lester J., Chromosomal aberrations in *Podophyllum peltatum,* 276
Nicotiana, selection following hybridization, 476
Nolte, D. J., Polygenes in eye pigment production in Drosophila species, 1
Nur, Uzi (with Daniel Zohary), Natural triploids in the orchard grass, *Dactylis glomerata* L. polyploid complex and their significance for gene flow from diploid to triploid levels, 311
Nyasa Lake, evolution in, 440
Olson, Everett C., The evolution of mammalian characters, 344
Orchard grass triploids, 311
Origins of Angiospermous Plants, (book review), 281
Origin of life, 362, 416
Padoa, Emanuele, Storia della Vita sulla Terra, (notice of book), 282
Paleoflora, evolution of psilophite, 264
Papilio glaucus group of species, 40, 212
Parsons, Thomas E., Nasal anatomy and the phylogeny of reptiles, 175
Pavlovsky, O. (with A. Brito da Cunha, Th. Dobzhansky, and B. Spassky), Genetics of natural populations. XXVIII, 389
Pelycosaur tympanum, 99
Perspectives in Marine Biology, (book review), 149
Phylogeny of mammals, 344, 405; reptiles, 175; rodents, 354
Pocket gophers, allopatric species of, 247
Podophyllum peltatum, chromosomal aberrations in, 276
Polygenic control of Drosophila eye pigments, 1
Polymorphism in *Bufo arenarum,* 532; *Choristoneura,* 537; *Drosophila subobscura,* 89; *Drosophila willistoni,* 389
Polyphyletic origin of mammals, 405
Polyploidy in Dactylis, 311; in Gymnosperms, 24
Ponerine ants, 122
Preadaptation and multiple evolutionary pathways, 194
Psilophyte paleoflora, 264
Quantitative systematics, 420, 423
Radiation-induced mutations in *D. melanogaster,* 526
Rendel, J. M., Canalization of the scute phenotype of Drosophila, 425
Reproductive isolation and mating calls in Anura, 452
Reptile nasal anatomy and phylogeny, 175
Rodent phylogeny, 354
Roe, Anne (with George Gaylord Simpson), notice of book, 574
Romer, Alfred S., The Vertebrate Story, (notice of book), 282
St. Lawrence, Patricia, Cold Spring Harbor Symposium on Quantitative Biology, vol. XXIII, reviewed by, 570
Saunders, J. T. and S. M. Manton, A Manual of Practical Vertebrate Morphology, (notice of book), 574
Savile, D. B. O., Limited penetration of barriers as a factor in evolution, 333; correction, 574
Schmidt, Karl P. Fund, announcement, 150

Scute phenotype in *Drosophila melanogaster,* 425
Selection following hybridization in *Nicotiana,* 476
Selection, natural, biometric test for, 561
Sequoia dendron species, 9
Sex-controlled inheritance in a moth, 537
Sexual behavior in butterflies, 212
Sierra Nevada bigtree forest, 9
Simpson, George Gaylord, Mesozoic mammals and the polyphyletic origin of mammals, 405; (with Anne Roe), notice of book, 574
Smith, Harold H. (with Kevin Daly), discrete populations derived by interspecific hybridization and selection in *Nicotiana,* 476
Sokal, Robert R., Comments on quantitative systematics, 420
Spassky, B. (with A. Brito da Cunha, Th. Dobzhansky and O. Pavlovsky), Genetics of natural populations. XXVIII, 389
Speciation in butterflies, 40, 212; fish, 440; tropical ants, 122
Stehr, G., Hemolymph polymorphism in a moth and the nature of sex-controlled inheritance, 537
Sterility, cytoplasmic in mosquitoes, 568
Stone, Donald E., A unique balanced breeding system in the vernal pool mouse-tails, 151
Storia della Vita sulla Terra, (notice of book), 282
Straus, W. L., Jr. (with B. Glass and O. Temkin), notice of book, 423; review of book, 573
Stumm-Zollinger, Elisabeth (with E. Goldschmidt), Geographical differentiation of inversion systems in *Drosophila subobscura,* 89
Systematics, quantitative, 420, 423
Takhtajian, A. L. (Takhtajan), Origins of Angiospermous Plants, review by Verne Grant, 281
Tateoka, Tuguo, *Lepturus* and *Monerma:* a remarkable example of parallel development of gross morphology in grasses, 418
Temkin, Owsei (with B. Glass and W. L. Straus, Jr.), notice of book, 423; review of book, 573
Toads, hypnotic reflex in, 532
Triploids in *Dactylis glomerata,* 311
Tropical ants, adaptive shift and dispersal, 122
Tympanum of pelycosaur and captorhinomorph reptiles, 99
Variability and environment, 145
Variation, geographical in the wolf, 283
Vernal pool mouse-tails, 151
Vertebrate Story, The, (notice of book), 282
Vickery, Robert K., Jr., Barriers to Gene Exchange within *Mimulus guttatus* (Scrophalariceceae), 300
Viola lactea hybrids, 318
Waisel, Yoav, Ecotypic variation in *Nigella arvensis,* L., 469
Watson, G. S. (with Ernst Caspari), On the evolutionary importance of cytoplasmic sterility in mosquitoes, 568
Wilson, Edward O., Adaptive shift and dispersal of a tropical ant fauna, 122
Wolf, geographical variation in, 283
Wood, Albert E., Eocene radiation and phylogeny of rodents, 354
Ziegler, Bernhard, Evolution in upper Jurassic ammonites, 229
Zirkle, Conway, Evolution, Marxian Biology and the Social Scene, (notice of book), 282; Forerunners of Darwin, reviewed by, 573
Zohary, Daniel, Is *Hordeum agriocrithon* the ancestor of six-rowed cultivated barley? 279; (with Uzi Nur), Natural triploids in the orchard grass, *Dactylis glomerata* L. polyploid complex and their significance for gene flow from diploid to triploid levels, 311